

REMARKS

Applicant thanks the Examiner for the detailed office Action.

This communication is in response to the nonfinal Office Action dated April 22, 2008, in which FIG. 3 and FIG. 5 were recommended for amendments, claims 1-20 are objected to because of informalities, claims 8-10, 12, 16 and 18 were rejected under 35 U.S.C. 112 second paragraph, claims 1, 3-9, 11-12 and 14-20 were rejected under 35 U.S.C. 102(e) as being anticipated by Richardson et al., US Publication No. 20030035187 and claims 2, 10 and 13 were rejected under 35 U.S.C. 103(a) as being unpatentable Richardson as applied to claims 1, 8 and 11, respectively in view of Burnsweig et al., U.S. Patent No. 4,206,316.

Recommendation for amendments of FIG. 3, FIG. 5 and FIG. 6

FIG. 3, FIG. 5 and FIG. 6 were recommended for amendments

The Office Action stated that "in Figures 3 and 6, "M-BIT" and "K-BIT" should be "M-BITS" for consistency and "K-BITS", and "K-" should be "K-BITS". In response "M-BIT" and "K-BIT" in FIG. 3 and 6 are amended to "M-BITS".

The Office Action stated that "Further, in Figure 3, the word "channel" should be deleted." In response, the word "channel" is deleted from FIG. 3.

The Office Action stated that "In Figure 5, "FORWARD PULSE" should be "FORWARD PULSE GENERATOR" and the numbers located in the horizontal and vertical exits are illegible." In response, "FORWARD PULSE" is amended to "FORWARD PULSE

GENERATOR" and the numbers located in the horizontal and vertical exits are amended to be legible.

Objections to claims 1-20

Claims 1-20 are objected to because of informalities. Amendments have been made to claims 1-2, 4-11, 13-15 and 19-20 to resolve the informalities.

Rejection of claims 8-10, 12, 16 and 18 under 35 U.S.C. 112

Claims 8-10, 12, 16 and 18 were rejected under 35 U.S.C. 112 second paragraph.

Amendments are made herein to claims 8-10, 12, 16 and 18 to resolve the lack of antecedent basis.

Rejection of claims 1, 3-9, 11-12 and 14-20 under 35 U.S.C. 102(e)

Claims 1, 3-9, 11-12 and 14-20 were rejected under 35 U.S.C. 102(e) as being anticipated by Richardson et al., US Publication No. 20030035187.

Per claim 1:

Claim 1 is amended to require:

- a clock operably coupled to the pulse width discriminator;
- a demultiplexer operably coupled to the pulse width discriminator and operable to de-multiplex the pulse stream in the signal into corresponding sub-slot positions;
- a pulse positioner operably coupled to the demultiplexer;

- a conjugate counter operably coupled to the pulse positioner and operably coupled to the clock;
- a forward counter operably coupled to the pulse positioner and the clock;
- a common slot pulse sorter operably coupled to the conjugate counter and the forward counter;
- a data conjugator operably coupled to the conjugate counter;
- a data combiner operably coupled to the data conjugator and the forward counter;
- a digital-to-analog converter operably coupled to the data combiner,
- wherein the system reconstructs an original signal sample from the forward and conjugate pulse positions.

The Richardson et al., US Publication No. 20030035187 does not disclose the matter that is added to claim 1. In particular, Richardson does not disclose a “clock,” a “pulse positioner,” a “forward counter,” or a “common slot pulse sorter.” Thus claim 1 and the dependent claims 2-7 are allowable.

The amendment to claims 1-3 are supported by paragraph 47 of the specification and FIG. 6.

The amendment to claim 4 is supported by paragraph 52 of the specification.

Per claim 8:

Claim 8 is amended to require “a first k-bit representative pulse is positioned in a forward manner and a second k-bit pulse is positioned on a conjugate pulse location within the same space.” However, Richardson et al. does not disclose that “a first k-bit representative pulse is positioned in a forward manner and a second k-bit pulse is

positioned on a conjugate pulse location within the same space.” In particular, Richardson does not disclose “positioned in a forward manner”, and “positioned on a conjugate pulse location.” Thus claim 8 and the dependent claims 9-10 are allowable.

The amendment to claim 8 is supported by paragraph 45 of the specification.

Per claim 11:

Claim 11 is amended to require:

- generating a trailing-edge digital pulse-width modulated signal from a digital input signal by comparing a sampled signal against a negative slope linear staircase signal occupying the same intra sample time span;

- generating a leading-edge digital pulse-width modulated signal, wherein a reference staircase is of positive slope having the same number of steps and occupying the same intra sample time frame;

- generating a position indicating pulse for each modulated edge of the digital pulse-width modulated signals;

- multiplexing the positions into forward and conjugate positioned pulses of different pulse widths;

- detecting equivalence between the input signal and a negative slope staircase signal followed by a negative edge triggered mono-stable, to produce a linear voltage-to-pulse position conversion characteristic; and

- generating conjugated positioned pulses by generating a leading edge digital pulse width modulated signal followed by a positive edge triggered mono-stable that differentiates modulated edges of leading edge digital pulse-width modulated signals.

The Richardson et al., US Publication No. 20030035187 does not disclose the matter that is added to claim 11. In particular, Richardson does not disclose a “negative slope linear staircase signal,” a “leading-edge digital pulse-width modulated signal, wherein a reference staircase is of positive slope having the same number of steps and occupying the same intra sample time frame,” or “generating conjugated positioned pulses by generating a leading edge digital pulse width modulated signal followed by a positive edge triggered monostable that differentiates modulated edges of leading edge digital pulse-width modulated signals.” Thus claim 11 and the dependent claims 12-20 are allowable.

The amendment to claim 11 is supported by paragraphs 48-49 of the specification and FIG. 4.

Rejection of claims 2, 10 and 13 under 35 U.S.C. 103(a)

Claims 2, 10 and 13 were rejected under 35 U.S.C. 103(a) as being unpatentable Richardson as applied to claims 1, 8 and 11, respectively in view of Burnsweig et al., U.S. Patent No. 4,206,316.

As discussed above, claims 2, 10 and 13 are allowable as being dependent upon allowable claims 1, 8 and 11, respectively.

CONCLUSION

Applicant believes this reply is fully responsive to all outstanding issues and places the application in condition for allowance. If this belief is incorrect, or other issues arise, the examiner is encouraged to contact the undersigned at the telephone number listed below.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Michael G. Smith".

Dated: 9 August 2008

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